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ABSTRACT OF THE DISCLOSURE

The invention relates to a titanium oxide-based polymer composition. The inventive composition comprises a $\text{TiO}_x(\text{OH})_y(\text{H}_2\text{O})_z$ ($x+y+z=3$) titanium oxide-based polymer in the form of a gel or sol. Said polymer, which has a one-dimensional (1D) structure, is made from concentrically-wound fibers having a periodicity which is deduced from the spacing between said fibers, of between 3.5 Å and 4 Å. Each fiber comprises TiO_6 octahedrons and each TiO_6 octahedron shares two opposite edges with two adjacent octahedrons (2×2.92 Å) in order to form infinite chains which develop along the axis of a fiber. According to the invention, two adjacent chains form double lines as a result of the shared edges (2×3.27 Å). The inventive polymer is suitable for use as a photosensitive element in a photovoltaic cell, such as a sunscreen for a window.